

THE GENUS EUCLIDIA, WITH THE DESCRIPTION OF A NEW SPECIES (LEPIDOPTERA, NOCTUIDAE, CATOCALINAE).

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Euclidia is a very compact genus of four species, *glyphica*, *dentata*, *ardita*, and *cuspidata*; the color patterns of which are essentially the same, the genitalia very similar, and the two known larvae, *glyphica* and *cuspidata*, structurally very close, both having two pairs of well developed prolegs on the fifth and sixth abdominal segments and a vestigial pair on the fourth abdominal segment. The genus *Euclidina* proposed by McDunnough for the North American species *cuspidata* is not retained. The statement in the original description that "... the genitalia of this European species [*glyphica*, type of *Euclidia*] show little resemblance to those of our North American species, *cuspidata* Hbn., . . ." seems to be an overemphasis of the differences exhibited by the male genitalia of the two species. Although two groups of species can be defined, they can hardly be said to represent genera, and the differences are not sufficient enough to warrant subgenera. *Gonospileia* Hübner, [1823], (*Verzeichniss bekannter Schmettlinge sic!*, p. 281) used by Hampson (*Catalogue of the Lepidoptera Phalaenae in the British Museum*, vol. 13, p. 50, 1913) for this genus must be restricted to its type, *munitata* Hbn. (Fig. 1), and *triquetra* Fabricus [*Schiffermüller, nomen nudum*] (Fig. 19). The genitalia of these two species are quite different from those of the species referred to *Euclidia*, and the moths have a somewhat different appearance.

Pending the action on an appeal (Z.N.(S)684), received 4th June 1952) to the International Commission on Zoological Nomenclature to validate at least part of the names published in the "TENTAMEN," I am using the traditional name *Euclidia*, which was first proposed by Hübner in the "TENTAMEN," [1806], and subsequently used by Ochsenheimer in 1816 in the same sense as Hübner, and credited by Ochsenheimer to Hübner. Tams (*Entomologist*, vol. 72, p. 139, 1939) has suggested that *Euclidia* Hübner, 1808, replace *Schinia* Hübner, 1818, and that *Ectypa* Billberg, 1820, be used for the concept I am calling *Euclidia*.

The use of *Euclidia* is complicated by the provisions of Opinion 97 of the International Commission on Zoological Nomenclature and by the action of the Commission at Paris in 1948 (*Bulletin of Zoological Nomenclature*, vol. 4, 337-338, 1950); Opinion 97 de-

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clared the "TENTAMEN" not published in accordance with the provisions of Article 25 of the Règles, and the Commission's action at Paris reaffirmed this, but deleted the obviously erroneous statements in the Opinion. The next use of the name after the "TENTAMEN" was by Hübner in the "Erste Zuträge zur Sammlung exotischer Schmetterlinge", dated 1808; this work and the "TENTAMEN" are undeniably linked, the "generic names" of the "Erste Zuträge" are the "stirps names" of the "TENTAMEN". I placed an application (Z.N.(S)353) before the Commission in 1950 asking for the suppression of the "Erste Zuträge" for nomenclatorial purposes. If we grant that this work was published and distributed, for which there seems to be no contemporary evidence, only the first four generic names are available; the remaining names are *nomina nuda*, based upon then undescribed and unfigured species. However, it must be added that many of the specific names used in the "Erste Zuträge" were not original with Hübner, but had been proposed with an indication in the Megerle Sales Catalogue of September 1804. Sales catalogues are not considered acceptable publications for the availability of names, thus the status of the names used in the "Erste Zuträge" is not altered by their proposal in a previously published sales catalogue. I cannot see any way of gaining availability for the stillborn *nomina nuda* of 1808, except by descriptions or figures actually coupled with the names. It is absolutely necessary to republish the names in connection with at least indications. The plates of the "Zuträge", issued between [1808]–[1809] and [1809]–[1813] and used by Hemming to confer supposed availability upon the names, bear only numbers and no names, and thus any claim that they do confer availability is *ultra vires*.

EUCLIDIA

Euclidia Hübner, [1806], Tentamen, p. [2]. (See: Opinion 97)

Type: *P* [*halaena*] *Noctua glyphica* Linnaeus, 1758 = *Euclidia glyphica* (Linnaeus). Monobasic.

Euclidia Hübner, 1808, Erste Zuträge zur Sammlung exotischer Schmetterlinge, pp. 3, 4, 8.

Included species: *Euclidia Gracilis* Hbn.

" *Graphica* Hbn.

" *Trifascia* Hbn.

" *Bifascia* Hbn.

" *Cuspidea* Hbn.

The only species described in the "Erste Zuträge" is *gracilis* [= *gracilentata* Hübner, 1818]; the remaining names are *nomina*

nuda. Therefore if the name is considered as originating in this publication, it would be monobasic and would replace *Schinia* Hübner, 1818 (Zuträge zur Sammlung exotischer Schmettlinge *sic!*, vol. 1, pp. 8, 11, 14). However, doubt could be raised concerning the monobasic nature of the genus because *cuspeida* and *trifascia* were first proposed in the Megerle Catalogue of September 1804, where it was said of the former, to come from Georgia and to be near and larger than *glyphica*, and of the latter, to come from Georgia and to be near *ononis*.

Euclidia Ochsenheimer, 1816, Schmetterlinge von Europa, vol. 4, p. 96.

Included species: *Monogramma* Hbn.

Glyphica Linn.

Triquetra Schiff. (Fortificata Fabr.)

Mi Linn.

This is the traditional citation for the genus of those authors who ignore the works of Hübner.

Type: *P[halaena]* *Noctua glyphica* Linnaeus, 1758 = *Euclidia glyphica* (Linnaeus). Designated by Duponchel, 1829, in Godart, Histoire Naturelle des Lépidoptères de France, vol. 7, part 2, 72.

Ectypa Billberg, 1820, Enumeratio insectorum in Museo Billberg, p. 86.

Included species: *Glyphica* Linn.

Glyphica var *Triquetra* Fabr.

Mi Linn.

Type: *P[halaena]* *Noctua glyphica* Linnaeus, 1758 = *Ectypa glyphica* (Linnaeus). Designated by Tams, 1939, Entomologist, vol. 72, p. 138.

Euclidina McDunnough, 1937, Canadian Entomologist, vol. 69, p. 66.

Type: *Drasteria cuspeida* Hübner, 1818 = *Euclidina cuspeida* (Hübner). Original designation and monobasic.

Euclidia cuspeida (Hübner), Figs. 12, 13, 14.

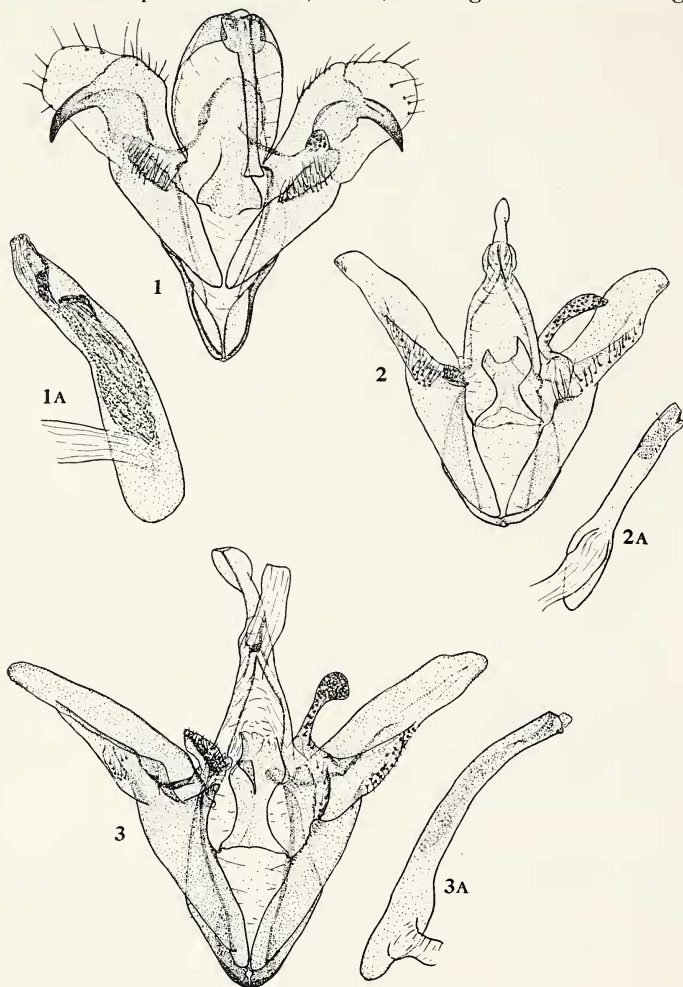
Noctua cuspeida Ziegler¹, 1804, in Megerle, Catalogus Insectorum quae Viennae Austriae die xx et sequentibus Septembris MDCCCIV auctionis distrabuntur, p. [16], no. 300. (Sales Catalogue, not available!)

Euclidia cuspeida Hübner, 1808, Erste Zuträge zur Sammlung

¹I have not been able to identify the Ziegler credited with the authorship of the names in the Megerle Catalogues; without doubt the names should be credited to Megerle himself.

exotischer Schmetterlinge, p. 8. (*Nomen nudum!*)

Drasteria cuspidata Hübner, 1818, *Zuträge zur Sammlung ex-*



Figs. 1-3 and 1A-3A. Male genitalia and aedeagi of *Gonospileia munitata* (Hübner). "Europe" (1 & 1A), *Euclidia ardata* Franclemont. Malahat, British Columbia (2 & 2A), *E. cuspidata* (Hübner). Decatur, Illinois (3 & 3A). Figures 1 & 1A are twice the scale of figures 2 & 3 and 2A & 3A.

otischer Schmettlinge *sic!*, vol. 1, p. 16, pl. [12], figs. 69, 70.

Euclidia cuspidata (Hübner), Holland, *The Moth Book*, 1903, p.

258, pl. 30, fig. 20.

Gonospileia cuspidata (Hübner), Hampson, 1913, Catalogue of the Lepidoptera Phalaenae in the British Museum, vol. 13, p. 51 (in part).

Euclidina cuspidata (Hübner), McDunnough, 1937, Canadian Entomologist, vol. 69, p. 66.

Gonospileia cuspidata (Hübner), Draudt, 1940, in Seitz, Grossschmetterlinger der Erde, vol. 7, p. 437, pl. 66, fig. e-1 (in part).

This species varies considerably in size (25mm to 38mm) and somewhat in the intensity of the color. In the south, where it is double brooded, it is largest; in the northwest it is smallest and somewhat darker in color. The range extends from Utah, Montana and Alberta to southern Quebec, thence south to northern Florida and southern Mississippi; it also occurs in the White Mountains of Arizona. The species is double brooded at least as far north as northern Virginia, but is single brooded at Ithaca, New York.

Male and female genitalia as figured; figures 3, 3A and 7.

***Euclidia ardita* n. sp., Fig. 15.**

Euclidia cuspidata Butler (not Hübner), 1881, Papilio, vol. 1, p. 171.

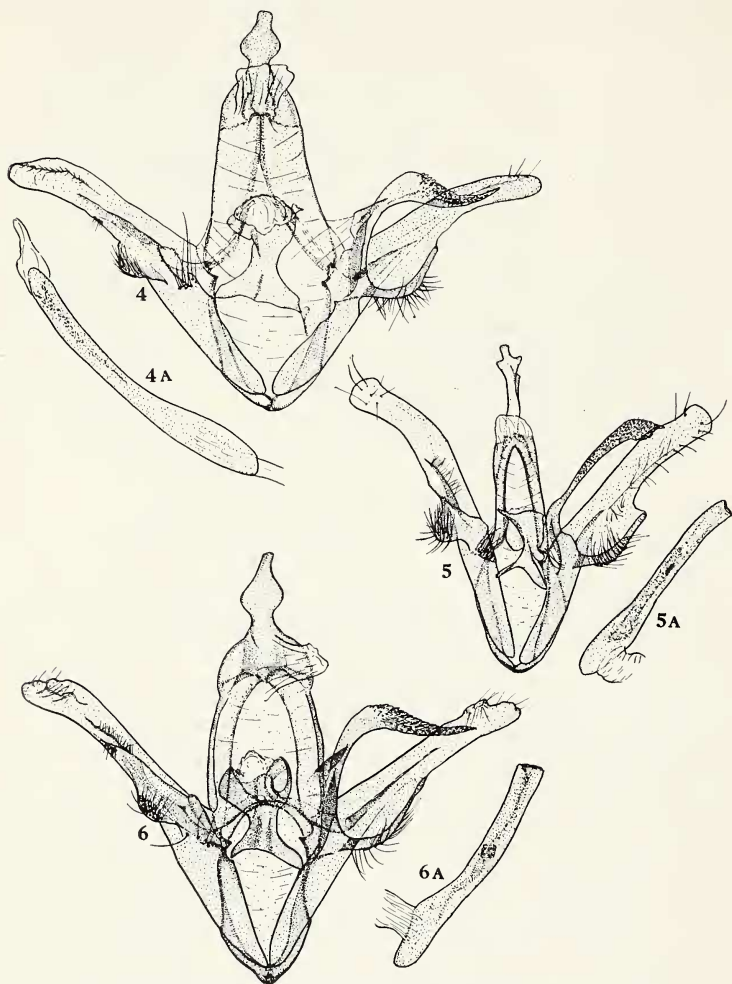
Gonospileia cuspidata Hampson (not Hübner), 1913, Catalogue of the Lepidoptera in the British Museum, vol. 13, p. 51 (in part), pl. 223, fig. 3 (misidentification).

Gonospileia cuspidata Draudt (not Hübner), 1940, in Seitz, Grossschmetterlinge der Erde, vol. 7, p. 437 (in part).

Superficially this species is very similar to *cuspidata* with which it has been confused in most collections. There is however, one difference which is rather constant: the outer margin of the shade lying on the outer side of the t.a. line in *cuspidata* is evenly curved in most specimens, whereas in *ardita* the middle part is almost straight or slightly incurved; also the general color of *ardita* is darker, with the hind wing showing brownish tints where *cuspidata* has yellowish or orange tints. The size is usually smaller than *cuspidata*, but specimens of the latter from western Ontario, Manitoba, Saskatchewan, and Alberta are as small or smaller than most specimens of *ardita*. The male and female genitalia of *cuspidata* and *ardita* show many discrete differences, for these reference may be made to the figures of these organs of both species.

General color brown with violaceous shadings. Fore wing dark violaceous brown; t. a. line sharply incurved to submedian fold, then sharply excurved to inner margin, forming a pronounced angle

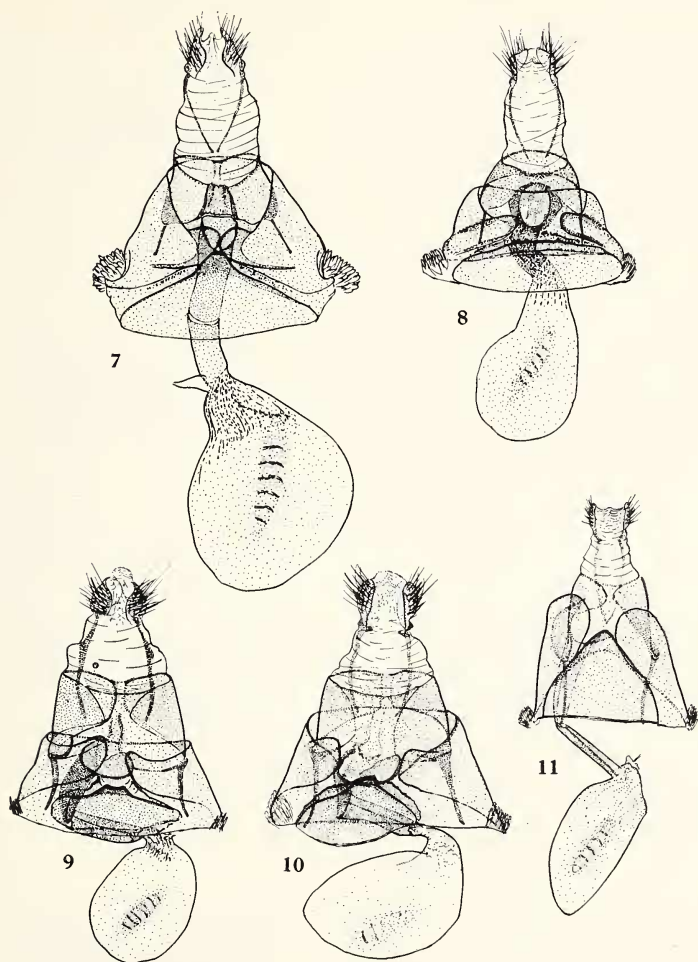
in the submedian fold; a dark brown oval spot near inner margin below angulation of t. a. line; a wide dark brown shade on outer



Figs. 4-6 and 4A-6A. Male genitalia and aedeagi of *Euclidia dentata dentata* Staudinger. Yablonga, Manchuria (4 & 4A), *E. glyphica* (Linnaeus). "Norvegia" (5 & 5A), *E. dentata consors* Butler. Japan (6 & 6A). These figures are the same scale as figures 2 & 3 and 2A & 3A.

side of t. a. line, filling the angle in the submedian fold; t. p. line slightly excurved below costa to M_1 , incurved from M_1 to submedian fold, then incurved from submedian fold to inner margin,

forming an obtuse angle in the submedian fold; a dark brown triangle from outer side of reniform to t. p. line at M_1 ; a vague, wide, darkish brown shade on inner side of t. p. line below triangle to



Figs. 7-11. Female genitalia of *Euclidia cuspidata* (Hübner), Quincy, Illinois (7), *E. arditata* Franclemont. Los Angeles Co., California (8), *E. dentata dentata* Staudinger. Djalantun. Manchuria (9), *E. dentata consors* Butler. Japan (10), *E. glyphica* (Linnaeus). "Europe" (11).

inner margin; subterminal area palest, but with a dark wedge-shaped mark on outer side of t. p. line below costa, and a small

outward pointing tooth below this in the interspace between R_5 and M_1 ; s. t. line vague, diffuse, pale and undulating; reniform large, ovoid; orbicular represented by a dark dot; median shade narrow, dark and undulating, from costa to inner side of reniform to inner margin. Hind wing brown; basal half dark blackish brown, outer half dull chestnut brown; two broad blackish brown bands crossing wing, one at outer margin of dark basal area, the second near middle of paler outer half. Expanse: males 25mm to 32mm, females 30mm to 34mm.

Hampson's figure cited above is a very good representation of this species.

The male genitalia (figures 2 and 2A) show a closer affinity with *cuspidata* than with the two Eurasian species. The uncus narrowly spatulate; valves asymmetrical, the right with a long, clubbed process, the left without a process but with a specialized hair patch on inner side near the base; juxta asymmetrical with the right side more massive; aedoeagus moderately long, vesica armed with a large patch of small spicules.

The female genitalia (figure 8) with seventh tergite with ventrally projecting, heavily sclerotized arms reaching the margins of the plate surrounding the ostium; seventh sternite a narrow oval plate with a strongly sclerotized ridge near its apex; ductus bursae short, well sclerotized, and with a narrow non-sclerotized band at about middle; the bursa membranous, inwardly finely spiculate, and with a diffuse spindle-shaped signum with five or six more densely sclerotized transverse ridges.

Distribution: California, Oregon, Washington, northwestern Idaho, and British Columbia.

Type: Male, Mt. San Hedrin, Mendocino County, California, April 27, 1939. W. R. Bauer, in Franclemont Collection.

Paratypes: 36 Males, 45 Females; from California (68), Oregon (1), Washington (1), Idaho (1), and British Columbia (9); in the

EXPLANATION OF PLATE II

Figs. 12-19. Adult specimens, natural size of *Euclidia cuspidata* (Hübner). Male; Arlington, Virginia (12); *E. cuspidata*. Male; Ithaca, New York (13); *E. cuspidata*. Female; Lloydminster, Alberta (14); *E. arditata* Franclemont. Male; Robson, British Columbia (15); *E. dentata dentata* Staudinger. Male; Yablonska, Manchuria (16); *E. dentata consors* Butler. Male; Yatsugatake, Japan (17); *E. glyphica* (Linnaeus). Male; Chislehurst, Kent, England (18); *Gonospileia triquetra* Fabricius. Male; Hungary (19).

BULL. B. E. S. VOL. LII

PLATE II



United States National Museum Collection (36), the American Museum of Natural History Collection (19), the Cornell University Collection (5), the William R. Bauer Collection (12), and the Franclemont Collection (9).

Euclidia dentata Staudinger, Fig. 16.

Euclidia cuspidata Eversmann (not Hübner), 1857, Bulletin de la Société Impériale des Naturalistes de Moscou, 1857, part 4, p. 436 (misidentification). Atlai Mountains.

Euclidia cuspidata Lederer (not Hübner), 1857, Die Noctuiden Europas, p. 195 (misidentification). Atlai Mountains.

Euclidia glyphica var. *dentata* Staudinger, 1871, Catalog der Lepidopteren des Europaischen Faunengebiets, Ed. 2, p. 135. (New name for *cuspidata* Eversmann, 1857, and *cuspidata* Lederer, 1857, not Hübner, 1818.)

Euclidia glyphica var. *dentata* Staudinger, Staudinger, 1892, Memoirs sur les Lépidoptères, Rédigés par N.M. Romanoff, vol. 6, p. 573 (in part).

Gonospileia dentata (Staudinger), Hampson, 1913, Catalogue of the Lepidoptera Phalaenae in the British Museum, vol. 13, p. 52 (in part).

Gonospileia dentata (Staudinger), Warren, 1913, in Seitz, Macrolepidoptera of the World, vol. 3, p. 344 (in part), pl. 62, fig. k-l.

This species was initially confused with the North American *cuspidata*; it is known from the Atlai Mountains and from Manchuria. The material before me was collected in the last locality. The species can be distinguished very easily from *cuspidata* by the t. a. line, which is more or less evenly curved from costa to inner margin, and by the absence of the dark brown oval spot near the inner margin in the basal area; otherwise the appearance is very similar.

Male genitalia figures 4 and 4A, female genitalia figure 9.

Euclidia dentata consors Butler, Fig. 17.

Euclidia consors Butler, 1878, Annals and Magazine of Natural History (series 5), vol. 1, p. 293.

Euclidia consors Butler, Butler, 1878, Illustrations of Typical Specimens of Lepidoptera Heterocera in the Collection of the British Museum, part 2, p. 42, pl. 34, fig. 6.

Euclidia glyphica var. *dentata* Staudinger, Staudinger, 1892, Memoirs sur les Lépidoptères, Rédigés par N. M. Romanoff. vol. 6, p. 574 (in part).

Gonospileia dentata (Staudinger), Hampson, 1913, Catalogue of the Lepidoptera Phalaenae in the British Museum, vol. 13, p. 52 (in part).

Gonospileia dentata (Staudinger), Warren, 1913, in Seitz, Macrolepidoptera of the World, vol. 3, p. 334 (in part), pl. 62, fig. k-2.

Superficially specimens of *dentata* from the islands of Japan show a tendency to be larger and somewhat more crisply marked, and the male and female genitalia show differences which are constant in the short series of specimens available for study. It thus seems advisable to treat the Japanese populations as a distinct race from the mainland Asiatic populations. Butler's name *consors*, based on specimens from Japan, is available.

Male genitalia figures 6 and 6A, female genitalia figure 10.

Euclidia glyphica (Linnaeus), Fig. 18.

P[halaena] Noctua glyphica Linnaeus, 1758, Systema Naturae, Ed. 10, p. 510.

Euclidia glyphica ab. *tristicula* Schultz, 1908, Societas Entomologica, vol. 22, p. 186.

Euclidia glyphica ab. *suffusa* Spuler, 1908, Die Schmetterlinge Europas, vol. 1, p. 307.

Euclidia glyphica ab. *marginata* Spuler, 1908, Die Schmetterlinge Europas, vol. 1, p. 307.

Euclidia glyphica ab. *obsoleta* Spuler,² 1908, Die Schmetterlinge Europas, vol. 1, p. 307.

Euclidia glyphica form *taurica* Culot, [1916?], Noctuelles et Géomètres d'Europe, vol. 2, p. 181, pl. 72, fig. 16.

Euclidia glyphica var. *nova aurantiaca* Schawerda, 1928, Zeitschrift Oesterrichischer Entomologen-Verein, vol. 13, p. 105.

The forms of this well known species are illustrated in Seitz, Macrolepidoptera of the World, vol. 3, pl. 62, and almost every general work on the European Lepidoptera mentions or figures the species. The range is given by various workers as covering most of Europe, Asia Minor, and Siberia. I have seen material from only Western Europe.

Male genitalia figures 5 and 5A, female genitalia figure 11.

Grateful acknowledgement is made to the Grace H. Griswold Fund of the Department of Entomology of Cornell University for assuming the expense of engraving the plates.

² This name is credited to Strand by Spuler, but I have been unable to find any reference to where Strand may have published the name.